HAND EMPLACED – WIDE AREA MUNITION (WAM)

Army ACAT II Program

Total Number of Systems:	15,259
Total Program Cost (TY$):	$800M
Average Unit Cost (TY$):	$52.4K
Full-rate production:	Undecided

Prime Contractor

Textron Defense Systems

SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2010

The Wide Area Munition (WAM) is a smart, autonomous, top-attack, anti-tank munition designed to defeat armored combat vehicles from a standoff distance. It utilizes acoustic and seismic sensors in its ground platform to detect, track, and classify potential targets, and then launches an infrared detecting submunition or "sublet" over the top of the selected tracked target. Once the sublet detects the target, it fires an explosively formed penetrator to defeat the target. Target vehicles include tanks (e.g., T-72 and T-80), breachers (e.g., KMT-4/5), and lightly armored tracked vehicles (e.g., BMP-2). The variant currently in LRIP is designated as the Hand Emplaced WAM (HE-WAM). It is designed to be carried and emplaced by one person, have a standoff lethal radius of 100 meters 360 degrees around, and be fully autonomous from final arming to target engagement. The WAM, when fielded, will contribute to ***precision engagement*** for the Army in the ***Joint Vision 2010*** scenario.

The WAM program did not qualify for operational test oversight from this office due to its funding threshold. Since it is the first fielded member of the WAM family of munitions, this system qualified for LFT&E oversight.

BACKGROUND INFORMATION

The WAM Required Operational Capability approved in March 1990 envisioned a "Family of WAM" concept of three variants: (1) hand-emplaced; (2) Volcano-delivered; and (3) deep attack Army Tactical Missile System delivered. Although the Family of WAM has since been designated an Acquisition Category II program, only the HE-WAM version has been developed. HE-WAM was approved for LRIP in September 1996; however, full-rate production was delayed indefinitely. The Army is restructuring the program to possibly include a new warhead design.

TEST & EVALUATION ACTIVITY

There was no LFT&E-related testing in FY99. However, problems that surfaced during reliability testing led to postponement of the full-rate production decision. The FY99 LFT&E activity included the assessment of the results of completed Live Fire Test and the preparation of the Director's Live Fire Evaluation, which was submitted to Congress in July 1999.

TEST & EVALUATION ASSESSMENT

The lethality evaluation of HE-WAM drew on data from: (1) static tower firings of the warhead against operating T-72 tank and BMP-2 targets at Aberdeen Proving Ground, MD; and (2) end-to-end firings of tactical HE-WAMs (with warheads) against moving T-72 tank targets at Yuma Proving Ground, AZ. The combination of test activities was adequate to support an assessment of the lethality of HE-WAM against its expected targets and to draw some inferences about the weapon's effectiveness. Live Fire Testing of HE-WAM against actual threat vehicles demonstrated its lethality given a hit against tanks and light armored vehicles, but only when critical areas were struck. As tested, HE-WAM is not effective out to its required range, and is only marginally effective at half the required range. If the full potential of the warhead is to be achieved, improvements are needed in the accuracy of the submunition relative to the critical areas of the targets. Continuing reliability problems are also a concern.

CONCLUSIONS, RECOMMENDATIONS, LESSONS LEARNED

The shotlines for the warheads statically fired from a tower at a T-72 or BMP-2 were selected from a large set of potential hitpoints generated by an engagement model using data from ground and captive flight testing. The damage inflicted by the tower shots generally led to substantial degradation in mobility of the targets (and sometimes catastrophic loss) due to shotlines impacting potentially critical target areas. In contrast, the end-to-end firings of tactical HE-WAMs against moving T-72 tanks tended to hit areas at the rear and edges of the targets where there were fewer critical components and thus, less loss of target function due to impacts. This scenario illustrates the value of realistic testing in which tactical munitions attack actual operating/moving threat targets under quasi-operational conditions.